UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

August 14, 2012

Gregory S. Punske, P.E.
Federal Highway Administration
Texas Division
300 East 8th St., Room 826
Austin, TX 78701

Dear Mr. Punske,

In accordance with our responsibilities under Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Draft Environmental Impact Statement (DEIS) prepared by the Federal Highway Administration (FHWA). FHWA, the Texas Department of Transportation (TxDOT), and Cameron County Regional Mobility Authority (CCRMA) are proposing to construct an alternate route connecting South Padre Island to the mainland of Texas.

EPA rates the DEIS as "**EO-2**" i.e., EPA has "identified significant environmental impacts and we request additional information in the Final EIS (FEIS)". The EPA's Rating System Criteria can be found here: http://www.epa.gov/oecaerth/nepa/comments/ratings.html. Detailed comments are enclosed with this letter which more clearly identify our concerns and the informational needs requested for incorporation into the FEIS. Responses to comments should be placed in a dedicated section of the FEIS and should include the specific location where the revision, if any, was made. If no revision was made, a clear explanation should be included.

EPA appreciates the opportunity to review the DEIS. Please send our office two copies of the FEIS and an internet link when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Federal Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20004. You may now electronically file your EIS using our *e-NEPA Electronic Filing Pilot* by linking to EPA's website at http://www.epa.gov/compliance/nepa/submiteis/index.html. Our classification will be published on the EPA website, www.epa.gov, according to our responsibility under Section 309 of the CAA to inform the public of our views on the proposed Federal action. If you have any questions or concerns, please contact John MacFarlane of my staff at macfarlane.john@epa.gov or 214-665-7491 for assistance.

Sincerely,

Debra A. Griffin
Associate Director
Compliance Assurance and
Enforcement Division

Enclosure

DETAILED COMMENTS ON THE
FEDERAL HIGHWAY ADMINISTRATION'S
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE
SOUTH PADRE ISLAND 2ND ACCESS PROJECT
STATE HIGHWAY 100, ACROSS LAGUNA MADRE, TO PARK ROAD 100
CAMERON COUNTY, TEXAS

BACKGROUND: The proposed action is located in Cameron County, Texas and would provide an alternate route connecting South Padre Island to the mainland of Texas. The proposed action consists of the construction of a new location highway facility (in sections), extending from State Highway (SH) 100 on the mainland to Park Road 100 on South Padre Island. The mainland roadway component would consist of a four-lane facility within a 150-foot right-of-way (ROW) from SH 100 north to either Buena Vista Drive, Laguna Vista Drive or FM 510 (depending upon the alternative chosen) and a 400-foot ROW from the end of the 150-foot section to the Laguna Madre. The Laguna Madre crossing component, which would be access controlled and tolled, would consist of four lanes within a single 80-foot wide bridge. The island roadway component would also consist of four lanes with sidewalks and would extend from the bridge to an interchange with Park Road 100 within a 400-foot ROW, then to the project terminus within the existing four-lane section of Park Road 100.

The Environmental Protection Agency's (EPA) primary concerns are listed below, which are followed by detailed comments which should be incorporated into the Final Environmental Impact Statement (FEIS). Responses to comments should be placed in a dedicated section of the FEIS and should include the specific location where the revision, if any, was made. If no revision was made, a clear explanation should be included.

DETAILED COMMENTS

2.0 ALTERNATIVES

The six phased alternatives development process described in this chapter provide detailed information about how alternatives were developed and refined. However, within Phase VI - identification of the recommended preferred alternative, alternatives appear to be randomly eliminated without utilizing a defined screening process. For instance, eliminating alternatives based solely on their proximity to a national wildlife refuge appears random and unsubstantiated. Section 5.1.6.6 discusses the refuge's future land acquisition plans and increased traffic due to the project. This information should be included in this section so the reader can have a better understanding of the criteria. In addition, removing alternatives that fragment a privately owned business (Harlingen Shrimp Farm) is also unsubstantiated. The EIS must take a balanced view of impacts to the natural environment and the built environment. The Federal Highway Administration's (FHWA) Environmental Review Toolkit states "It must be made clear what criteria were used to eliminate alternatives, at what point in the process the alternatives were removed, who was involved in establishing the criteria for assessing alternatives, and the measures for assessing the alternatives' effectiveness."

Recommendation:

- Develop an improved screening process for reasonable alternatives before determining the preferred alternative;

- Utilize FHWA's Toolkit guidelines and the Council on Environmental Quality's Regulations for Implementing NEPA and "rigorously explore and objectively evaluate all reasonable alternatives"[1] by developing a defined screening process for the 11 reasonable alternatives. The screening process should rate each alternative against a set of pre-determined criteria. Each alternative should then be analyzed for its level of impact on that resource, e.g. no effect, negligible effect, minor effect, major effect, significant effect. Only that alternative that effectively meets or best meets all of the screening criteria should be recommended as the preferred alternative.

2.5 Phase VI – Identification of the Recommended Preferred Alternative, page 2-19

The recommended preferred alternative, Alternative 6, has a host of significant impacts. To further avoid or minimize impacts to wetlands, seagrasses, and endangered species habitat, alternatives could be adjusted or modified to reduce impacts or a new alternative could be identified. To minimize impacts:

- ROW could be reduced from 400 ft to 150-200 ft;
- a combination of existing alternative could be rerouted to minimize the unavoidable adverse impacts to high quality coastal resources;
- the least damaging construction method could be stipulated in the plans and specifications for the contractor; and
- wetlands, tidal flats and endangered species habitat could be spanned to a height that would allow light penetration and normal vegetative growth.

2.6.1 Mainland Roadway Component, page 2-20

A 400-foot ROW is proposed for some portions of the roadway. Apparently, the additional ROW is not currently required for safety or mobility as this section states that it would be "reserved for future transportation use." The proposed 400-ft ROW would cause unnecessary and avoidable impacts to endangered species habitat, wetlands, and other important resources. CEQ regulations state that mitigation should minimize "impacts by limiting the degree or magnitude of the action and its implementation."[2]

Recommendation:

- Reduce the proposed 400-ft ROW in order to minimize impacts to regulatory and non-regulatory habitat, threatened and endangered species habitat, jurisdictional waters and wetlands, and other resources.

[1] 40 CFR 1502.14
[2] 40 CFR 1508.20

2.7.2.1 Parallel Dredging, page 2-23

The DEIS states that the total dredged material is estimated to be 2.5 million cubic yards. The DEIS fails to analyze the placement of the dredged materials. Dredged materials are a potentially valuable resource if properly used for beneficial use.

Recommendation:

- Develop a dredged material management plan which evaluates all available alternatives for beneficial use of the material and/or identifies upland disposal sites; and

- Submit dredged material to contaminant testing before it is placed for beneficial use or in an upland disposal site.

3.0 AFFECTED ENVIRONMENT

3.6.3 Wetlands and Other Waters of the U.S.

As stated on page 3-49, wetland identification is based on National Wetland Inventory (NWI) maps and that these maps differ from USACE methods for determining jurisdictional wetlands. We believe that wetlands impacts are undervalued by utilizing NWI data which is from the analysis of high altitude imagery and not detailed on-the-ground inspection.

Recommendation:

- Provide verified field wetland delineations using a combination of the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual and the Atlantic and Gulf Coastal Plain Regional Supplement (Version 2.0).

4.0 ENVIRONMENTAL CONSEQUENCES

General

The EIS should define all impacts by degree of the impact (minor, moderate, or significant) and the longevity (short or long) of the impact.

4.4 Climate and Air Quality Impacts, page 4-42

By statutes, Executive Orders, and agency policies, the Federal government is committed to the goals of energy conservation, reducing energy use, and eliminating or reducing greenhouse gas (GHG) emissions.

Recommendation:

- Due to the proposed project's long-term utility, discuss GHG emissions and climate change. For guidance, please see CEQ's "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions" dated February 18, 2010.

- In order to further reduce potential air quality impacts related to construction emissions, the FEIS should include a Construction Emissions Mitigation Plan.

4.6.4 Wetlands and Other Waters of the U.S., page 4-52

EPA Region 6 wetlands staff participated in a site visit with TxDOT and the Texas Parks and Wildlife Department on July 18, 2012. During the site visit, participants discussed reliance on the National Wetland Inventory (NWI) maps to determine the extent of wetlands in the project area. The NWI data is from the analysis of high altitude imagery and not detailed on-the-ground inspection. Verified field wetland delineations and wetland functional assessments are required to determine the full extent and nature of wetlands within the project area.

The recommended preferred alternative landing on South Padre Island would adversely impact high quality coastal wetland complexes and listed species critical habitat. These coastal wetland complexes are increasingly rare and unique to this semi-arid region of Texas and extremely difficult to mitigate. EPA is very concerned that the alternatives analysis in the DEIS does not address significant impacts that may result in substantial and unacceptable harm to aquatic resources of national importance (ARNI). In general, EPA staff has assessed special aquatic sites located north of the city limits of South Padre Island and specifically north of The Shores development as potential ARNIs. Potential ARNIs are evaluated in more detail during the Section 404 of the Clean Water Act permitting process.

Under Permits, on page 4-54, the DEIS should state that the alternatives analysis must determine if construction of the project would result in substantial and unacceptable impacts to ARNIs. In the opinion of EPA, it is likely that ARNIs are located within the ROW of many of the northern island landing alternatives including the recommended preferred alternative.

Contrary to the last paragraph under Permits in this section, a single and complete project must be identified which likely would include Project Specific Locations (PSLs) such as borrow areas used to fill jurisdictional waters of the U.S. or placement areas located in waters of the U.S. In the opinion of EPA, the likely permit applicants, TXDOT and CCMRA, would be responsible for permitting and mitigation. In addition, criteria should be established for PSLs that would state that all PSLs must be located in previously disturbed uplands. However, disposal of dredged materials could be used for beneficial use, if appropriate.

Recommendation:

- Consider ARNIs in the alternative analysis to select the recommended reasonable alternative for the project;

- To determine the true extent of wetlands in the project area, verified field wetland delineations and preliminary jurisdictional determinations (PJDs) from the USACE, Galveston District are required. When an approved wetland delineation and PJD is obtained, a preferred alternative can be refined;

- Draft mitigation scenarios should be developed for the unavoidable adverse impacts to waters of the U.S., including wetlands;

- Conduct a Section 404(b)(1)[3] alternatives analysis for this project to determine the least environmentally damaging practical alternative; and

- Consider adapting approved wetland functional assessment models to determine the wetland types that would be impacted and the extent of functional loss and appropriate compensatory mitigation that would be required to fully restore the unavoidable adverse impacts to waters of the U.S., including special aquatic sites as identified in 40 CFR Part 230 Section 404(b)(1).

For questions regarding wetlands comments, please contact Jim Herrington at 254-770-6595.

4.7.1 Vegetation Impacts, page 4-58

As there are impacts to the S2 and S3 series of vegetation, EPA recommends mitigation according to the Texas Department of Transportation (TxDOT)-Texas Parks and Wildlife Department (TPWD) Memorandum of Understanding.

Recommendation:

- Coordinate with TPWD to discuss appropriate mitigation measures.

4.7.1 Seagrass Impacts, page 4-59

Seagrasses are listed as special aquatic sites under Section 404(b)(1) guidelines, thus we recommend moving this discussion to Section 4.6.4, Wetlands and Other Waters of the U.S.

This section states "Direct impacts to the seagrasses would include the removal of plants during construction, and increased suspended sediments due to sediment disturbing activities." Seagrasses are listed under Section 404 (b)(1) guidelines[4] as a special aquatic site as vegetated shallows. These guidelines list a possible loss of value due to dredge and fill activities. These losses in value include:

(1) changing water circulation patterns;
(2) releasing nutrients that increase undesirable algal populations;
(3) releasing chemicals that adversely affect plants and animals;
(4) increasing turbidity levels, thereby reducing light penetration and hence

[3] Federal Guidelines promulgated at 40 CFR Part 230 under Section 404(b)(1) of the Clean Water Act
[4] http://www.wetlands.com/epa/epa230pe.htm

photosynthesis; and

(5) changing the capacity of a vegetated shallow to stabilize bottom materials and decrease channel shoaling. The discharge of dredged or fill material may reduce the value of vegetated shallows as nesting, spawning, nursery, cover, and forage areas, as well as their value in protecting shorelines from erosion and wave actions. It may also encourage the growth of nuisance vegetation.

Seagrasses are among the most productive submerged habitats. The Draft EIS states (page 3-60) that "[s]eagrass meadows in the Laguna Madre are still abundant but threatened, so the focus in this area is on protecting existing seagrass meadows." A new resource, recently made available at www.texasseagrass.org, displays the maps and final results of the Texas Seagrass Monitoring Plan 2011 sampling in a report entitled "Assessment of seagrass habitat quality and plant physiological condition in Texas coastal waters" by Christopher J. Wilson and Kenneth H. Dunton (UTMSI). It clearly shows the rarity of *Thalassia testudinum* in Texas coastal waters and that the species largely occurs only in two locations, with the lower Laguna Madre being the largest. This study also found the lowest and most variable water clarity was in the lower Laguna Madre. For these reasons, the projected impacts from this project could make a significant impact on the statewide occurrence of the species.

Tidal Mud Flats

Tidal flats are another ecologically significant habitat type in the lower Laguna Madre, providing essential foraging habitats for wintering and migrating shorebirds and wading birds (The Laguna Madre of Texas and Tamaulipas, ed. by John W. Tunnell, Jr. and Frank W. Judd, 2002).

Tidal mud flats are listed as special aquatic sites under Section 404(b)(1) guidelines, thus we recommend moving this discussion to Section 4.6.4, Wetlands and Other Waters of the U.S. Section 404 (b)(1) guidelines list a possible loss of value to mud flats due to dredge and fill activities. These losses in value include:

(1) increase in the rate of erosion or accretion;
(2) depletion or elimination of mud flat biota, foraging areas, and nursery areas;
(3) alteration of the deposition of suspended material affecting the productivity of the area; and
(4) reduction of capacity to dissipate storm surge runoff.

Recommendation:

- Include an improved characterization and analysis of the adverse effects to seagrasses and tidal flats. Only listing the areal extent of impacts does not fully disclose the consequences of dredge and fill activities to these designated special aquatic sites; and
- Analyze the impacts in terms the loss of values listed in the 404 guidelines.

For questions regarding seagrass and tidal mud flats comments, please contact Barbara Keeler at 214-665-6698.

4.7.4 Threatened and Endangered Species Impacts, page 4-74

Section 3.7.2.3 Observed Vegetation Communities states there are approximately 2,000 acres of light and dense brush habitat within the study area. Section 4.7.4 states Alternative 6 would have the largest impact to this habitat type (107 acres). As the ocelot and jaguarundi are critically endangered and this habitat is the only habitat that they utilize, a five percent reduction is significant. CEQ regulation 1508.27 states the following can be considered in evaluating significance as used in NEPA, "Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas" and "The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973". As the study area is considered ecologically sensitive and the preferred alternative would have critical adverse effects to endangered species and their habitat, EPA believes the effect of removing five percent of light/dense brush habitat is significant and should be mitigated.

Recommendation:

- The project team should coordinate with the U.S. Fish and Wildlife Service to develop a mitigation plan that includes impacts to light and dense brush vegetation to ensure the protection of the critically endangered ocelot and jaguarundi; and

- Mitigation could be accomplished by purchasing tracts of light/dense brush near or adjacent to Laguna Atascosa National Wildlife Refuge and transferring title to the refuge or a non-profit land management/conservation organization.

Project Specific Locations (PSL)

PSLs outside the ROW that would be established to support construction of the roadway such as borrow and disposal sites, staging and storage areas, and concrete and aggregate plants, must be identified as direct impacts. TxDOT stated that these locations outside the ROW would be coordinated with contractors during the letting or construction of the project and that they could not stipulate where PSLs should be located.

Recommendation:

- Coordinate with EPA and the USACE to identify environmentally sensitive sites that should be avoided for use as PSLs; and

- Make a concentrated effort to identify previously disturbed upland sites to be used for PSLs and analyze any impacts to the natural environment by utilizing those PSLs.

5.0 INDIRECT IMPACTS

5.1.5.2 Induced Growth Effects, page 5-17

The analysis of the potential for induced development associated with the various alternatives are generally informative. However, the explanation does not seem to address any potential differences for inducing growth between the three different landing points on South Padre Island. It would intuitively seem that the more northerly landing point (alternatives 1, 2, and 3) and possibly the middle landing point (alternatives 4,5,6, and 7) might be more likely to encourage development further north (in areas less disturbed). The southern terminus (alternatives 8, 9, 10, and 11) might be more likely to encourage additional growth southward from the landing point, merely concentrating growth in areas already more densely disturbed.

Recommendation:

- Develop a more detailed analysis of the potential effects and locations of induced growth on both the mainland and the island. The website for the Center for Environmental Excellence by the American Association of State Highway and Transportation Officials[5] (AASHTO) states methods for analyzing induced growth effects of transportation projects include quantitative methods, such as travel demand models and integrated land use and transportation models, and qualitative methods such as scenario writing, Delphi Technique, and expert panels. AASHTO's *Handbook on Integrating Land Use Considerations into Transportation Projects to Address Induced Growth* goes into detail regarding these methods.

General

The DEIS appears not to address indirect impacts to waters of the U.S., including wetlands and vegetation. Induced, private development could cause significant indirect impacts to wetlands and vegetation. Induced development impacts to waters of the U.S. and vegetation should be analyzed in regards to the overall regional affect of filling streams and wetlands and mechanically clearing vegetation. In this environmentally sensitive region, clearing vegetation and filling wetlands, streams, and tidal mud flats, could result in significant adverse impacts to several endangered species and aquatic resources.

7.0 MITIGATION AND PERMITTING

While the DEIS includes numerous statements indicating an appreciation for sensitive ecological resources and a willingness to mitigate for losses, the lack of a solid plan is a significant concern to EPA. Page ES-53 notes that the "mitigation options and details will be developed further through more detailed studies of resources during the final environmental impact statement and ongoing agency coordination." The absence of a greater level of detail at the DEIS stage constrains a thorough evaluation of the potential impacts of the project in a significant way. Our concerns and recommendations for mitigation are listed below for wetlands, seagrasses, and tidal flats.

[5] http://environment.transportation.org/environmental_issues/indirect_effects/

Wetlands

Table 7-2 lists some preliminary mitigation options for freshwater and salt marsh wetlands, including "purchase of land for wetland creation" and "donation to agency restoration project". Section 7.6.3 states "Preliminary mitigation options include on-site mitigation and off-site mitigation." While these options are speculative, a draft mitigation plan would include specific information on wetland type and function and is essential for a review of the projected impacts to wetlands and other waters of the U.S.

Seagrasses

Table 7-2 lists some preliminary mitigation options for seagrass habitat, including "signage/establishment of protected areas." While we encourage this type of action in general, measures to protect habitat not threatened by this project should not be a first option for mitigating project losses. Also, because construction methods have not yet been decided, the DEIS contains only a vague statement about adhering to construction best management practices to protect seagrasses. A feasible option to control scour might be to install temporary underwater sediment curtains to minimize turbidity around construction areas near seagrass beds.

The DEIS makes a commitment to conduct detailed scour analyses during the design phase of the project to determine the potential for indirect impacts to seagrass beds. However, the available or planned impact minimization or mitigation techniques to be employed to control scour are not adequately addressed. If scour channels are allowed to form and subsequently to fill with detritus or other debris, low oxygen and high turbidity conditions could result, inhibiting seagrass recovery.

A draft mitigation plan is essential for a review of the projected impacts to seagrass beds, largely because the species to be most impacted (*Thalassia testudinum*) is the most difficult to re-establish. *Thallasia testudinum* is a climax species which requires exacting conditions for survival and propagation. Finding an appropriate mitigation area large enough in size and displaying suitable environmental conditions would be difficult. If a site could be identified in the lower Laguna Madre, transplanting this species is problematic and an analysis of the potential for success should be provided. If, however, the recommended alignment were to be altered in such as way as to shift impacts to *Halodule wrightii* beds, the impacts would still be significant, although the ecological considerations for mitigating those impacts might be somewhat different. Any alterations to the preferred project alignment must be accompanied by revised seagrass impact and mitigation analyses.

In summary, the challenges of mitigating seagrass impacts in the lower Laguna Madre would call for a higher level of planning in the early stages of project development than is evidenced by the DEIS. An adequate evaluation of the environmental impacts would require an understanding as to whether the impacts to sensitive resources could possibly be mitigated at all or whether other types of compensation, such as preservation, would be the only viable option.

Tidal Mud Flats

Mitigation options presented for this habitat type are also quite vague, noting that donations may be made to agency restoration projects or additional land may be purchased for wetland creation. However, the reference cited above notes (Tunnell and Judd) that "With few exceptions, there has been no 'in kind' mitigation for tidal flats lost to development in Laguna Madre." In order to adequately evaluate the project impacts to wind-tidal flats, we would need information as to whether these options are available in the immediate vicinity.

Recommendation:

- Develop a draft mitigation plan (and make it available to EPA prior to the release of the FEIS). A draft plan should strive for avoidance and minimization first and should outline appropriate compensation and enhancement measures for unavoidable impacts to wetlands and special aquatic sites. A draft plan should include the evaluation of the least environmentally damaging practicable alternative, according to the Section 404(b)(1) guidelines and should outline a monitoring plan. Please note that any compensatory mitigation plan must fully comply with the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (Mitigation Rule) effective June 9, 2008.

ADDITIONAL COMMENTS

Table ES-4 (Summary of Cumulative Impacts Analysis, page ES-52) should include sensitive coastal habitats and special aquatic sites such as seagrass beds and mud flats.

The FEIS should discuss whether measures were considered to incorporate bird sensitive lighting on the causeway.

EPA recommends that the bridge be designed with the ability to collect and treat all storm water runoff before it is discharged into the Laguna Madre. Runoff should be conveyed to a central location(s) where petroleum, salt, sand, and other materials are removed and/or treated prior to discharge. This would ensure that the Laguna Madre and surrounding waters remain in attainment for their designated uses under the Texas Commission on Environmental Quality’s Water Quality Standards.